Claims 1-40 are pending in the application and stand rejected. Claims 17, 21, 36, and 38 are currently amended. Reconsideration of the claim rejections is requested based on the following remarks.

Claim Rejections – 35 U.S.C. 101

Claims 17-19 and 36-40 are rejected as being directed to non-statutory subject matter. The Examiner contends that with respect to claims 17 and 36, the claim language "*program storage device readable by a machine*" is not acceptable claim language because the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason. Applicants respectfully disagree.

A program storage device, such as a memory chip, DVD, floppy disk, Flash memory, etc., that stores a program of instructions, which is readable by a machine (e.g., computer) is *undoubtedly* statutory subject matter. The term "program storage device" is in fact a general term for a computer readable-medium or memory. Support for this claim language is found, for example, in paragraph [0026] of Applicants specification (see Publication No. 2004/0228529) which states:

> **It is to be understood that the systems and methods described herein in accordance with the present invention may be implemented in various forms of hardware, software, firmware, special purpose processors, or a combination thereof. In one exemplary embodiment of the invention, the systems and methods described herein are implemented in software as an application comprising program instructions that are tangibly embodied on one or more program storage devices (e.g., magnetic floppy disk, RAM, CD Rom, DVD, ROM and flash memory), and executable by any device or machine comprising suitable architecture.** (emphasis added)

There is no legal or technical basis for finding that a "program storage device" is non-statutory subject matter that does not fall within a category of patent eligible subject matter. If the Examiner believes that a claim directed to a "program storage device" such as memory device is *per se* not statutory subject matter, Applicants would request that the Examiner support this finding with citation to legal precedent.

In any event, in the interests of cooperation, Applicants have amended the preambles of claims 17 and 36 to read, in part, *A program storage device readable by a computer, tangibly embodying a program of instructions executable by the computer . . .* In this regard, the claim

clearly recites statutory subject matter of a program storage device that is readable by a computer. Withdrawal of the 101 rejections is requested.

Claim Rejections - 35 U.S.C. § 103

Claims 1, 2 and 4-40 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication 2003/0223627 to Yoshida et al. in view of U.S. Patent No. 6,146,390 to Heilbrun, et al. The rejections is respectfully traversed. At the very minimum, claims 1, 17, 20 and 36 are patentable over the combination of Yoshida and Heilbrun.

Applicants respectfully assert that the obviousness rejections are legally deficient as a matter of law. The obviousness rejections are improperly premised on selective parsing of claim language and selective picking and choosing among different teachings of the cited references to fit the parsed claim language for the sole purpose of reconstructing the claimed inventions with no due consideration given to the overall context of the claimed inventions.

For example, claim 1 recites:

A method for automatic 3D (three-dimensional) lesion segmentation, comprising the steps of:

determining a 3D surface of a lesion in an original 3D volume space;

transforming the 3D surface of the lesion to a spherical coordinate space;

processing the 3D surface in the spherical coordinate space to determine a lesion surface in the spherical coordinate space which separates the lesion from surrounding normal structure;

transforming the lesion surface in the spherical coordinate space to the original 3D volume space; and

extracting a volume corresponding to the lesion from the original 3D volume space using the transformed lesion surface.

On page 4 of the Office Action, the Examiner formulates the obviousness rejection of claim 1 by extracting/parsing certain claim language to assert that Yoshida teaches:

determining a 3D surface of a lesion in an original 3D volume space;

extracting a volume corresponding to the lesion from the original 3D volume space using the transformed lesion surface.

However, the Examiner acknowledges that <u>Yoshida</u> fails to teach the claimed features regarding *"transforming the 3D surface of the lesion to a spherical coordinate space, processing the 3D surface in the spherical coordinate space to determine a lesion surface in the spherical coordinate space... and, transforming the lesion surface in the spherical coordinate space to the original 3D volume space"*. This acknowledgment regarding <u>Yoshida</u> underscores the impropriety of the bases for rejection claim 1.

In particular, in the proper context of claim 1, there is <u>no</u> basis for the Examiner's assertion that <u>Yoshida</u> teaches *extracting a volume corresponding to the lesion from the original 3D volume space* **using the transformed lesion surface** because, in the proper context of claim 1 *extracting a volume corresponding to the lesion from the original 3D volume space* ***using the transformed lesion surface*** means that the transformed lesion surface as transformed from spherical coordinates to the original 3D volume space.

In this regard, the rejection of claim 1 is grounded on inconsistent and contradictory findings. The Examiner cannot argue that <u>Yoshida</u> teaches *extracting a volume corresponding to the lesion from the original 3D volume space* **using the transformed lesion surface** while acknowledging that <u>Yoshida</u> **does not teach** *transforming the lesion surface in the spherical coordinate space to the original 3D volume space.*

Moreover, other than mere citation to paragraph [0162] and [0275] of Yoshida, the Examiner provides no supporting explanation regarding how Yoshida teaches *extracting a volume corresponding to the lesion from the original 3D volume space* **using the transformed lesion surface**, as the Examiner contends on page 4, paragraph 6 of the Office Action.

Moreover, with regard to the Examiner's reliance on <u>Heilbrun</u> as curing the deficiencies of <u>Yoshida</u>, the Examiner has not shown or explained how Heilbrun suggests (in the cited portions) the claimed features of:

transforming the 3D surface of the lesion to a spherical coordinate space;

processing the 3D surface in the spherical coordinate space to determine a lesion surface in the spherical coordinate space which separates the lesion from surrounding normal structure;

transforming the lesion surface in the spherical coordinate space to the original 3D volume space.

Applicants find no reasonable basis for construing the cited sections as having any relation to the above claimed features. Given the disparity in teachings as compared to the

claimed inventions, Applicants request that the Examiner provide a supporting explanation for reliance on Heilbrun, rather than just mere recitation to seemingly irrelevant passages of Heilbrun. In particular, Applicants would like an explanation by the Examiner as to how Col. 8 lines 50-65 of Heilbrun teaches or suggests *processing the 3D surface in the spherical coordinate space to determine a lesion surface in the spherical coordinate space which separates the lesion from surrounding normal structure*, when Heilbrun merely states, as a general matter, that other types of 3D coordinate systems may be used instead of a Cartesian coordinate system.

Overall, the Office Action does not fairly set forth a prima facie case of obviousness that demonstrates how the overall subject matter of claim 1 is taught or suggested by the combined teachings of Yoshida and Heilbrun. Moreover, with respect to independent claims 17, 20 and 36, the Examiner offers no supporting basis for the rejection other than that such claims are "analyzed as claim 1 above" (see, pages 9 and 11 of the Office Action). Thus claims 1, 17, 20 and 36 (and all pending claims that depend from such claims) are believed to be non-obvious over the cited combination of Yoshida and Heilbrun.

Claim 3 is rejected as being unpatentable over Yoshida, Heilbrun and Paik. Without elaboration, since claim 3 depends from claim 1 and since the combination of primary references Yoshida and Heilbrun do not render claim 1 obvious, claim 3 is patentable over the cited combination of references at least for the same reasons given for claim 1. Withdrawal of the obviousness rejections is requested.

Respectfully submitted,

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